

What is claimed is:

Sub E1
Sub A2

1. A memory system, comprising:

2 a plurality of defect-adaptive memory devices for sequentially storing information needed
3 for data recovery in a first region of a recording medium in the form of blocks, and storing data in
4 a second region other than said first region;

5 a plurality of caches respectively connected to said memory devices, for storing information
6 blocks needed for data recovery, the information blocks being read from a predetermined memory
7 device; and

8 a controller connected to each memory device and a corresponding cache, for controlling
9 writing and reading of data and information needed for data recovery in each memory device,
10 calculating information needed for recovery of data read from each memory device, and storing the
11 information needed for recovery of data calculated in a predetermined cache.

2. The memory system of claim 1, further comprised of said controller determining
whether data recovery information with relation to data is stored in each cache.

3. The memory system of claim 1, further comprised of said information blocks in which
the information needed for data recovery is stored are sequentially set up from the most outer
cylinder on said recording medium.

1 4. The memory system of claim 3, further comprised of said information needed for data
2 recovery being modified to a value obtained through calculation process of new data recovery
3 information.

1 5. The memory system of claim 4, further comprised of said information needed for data
2 recovery being calculated by exclusive-ORing of previous data, recovery information with relation
3 to the previous data and new data.

1 6. A redundant arrays of inexpensive disks (RAID) system, comprising:
2 a plurality of disk drives each consisting a plurality of data blocks for storing data and a
3 predetermined number of parity blocks for storing parity information need for data recovery;
4 a plurality of caches respectively connected to said plurality of disk drives for storing parity
5 information needed for data recovery; and
6 a controller functionally connected to each disk drive and each cache for controlling write
7 operation of data and parity information needed for data recovery in each disk drive by a process of:
8 calculating a target location of a predetermined disk drive upon receipt of a data
9 writing instruction from a host computer;
10 reading old data from the predetermined disk drive;
11 determining whether old parity information to be read from the predetermined disk
12 drive is hit in a corresponding cache;
13 alternatively, when the old parity information to be read from the predetermined disk

14 drive is hit in the corresponding cache, reading the old parity information and updating a
15 cache table;

16 calculating new parity information after performing an exclusive OR operation
17 between the old parity information read and new data;

18 updating the cache table; and

19 writing the new data and new parity information on the target location of a
20 predetermined disk drive.

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